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Sustainable Supply Chain Management: A Conceptual Framework

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Abstract

Increasingly, global and national companies are focusing on improving their supply chain sustainability. Sustainable Supply Chain Management (SSCM) is a multi-disciplinary approach, concerned with simultaneously improving firms' social, economic and environmental performance through Supply Chain Management (SCM) practices. SSCM approach aims at building company's supply chain by delivering sustainable benefits to a firm's various stakeholder groups using sustainability-oriented supply chain management (SCM) practices/strategies. The objective of this review article is to present a critical review on SSCM approach. Building on the review of literature, the article offers a conceptual framework which illustrates the key motivators, barriers and dimensions of SSCM. In addition, the impact on performance of SSCM practices are integrated with SSCM dimensions. The article concludes with a discussion on theoretical contributions and the implications of SSCM approach for practitioners.

Keywords: Sustainability, supply chain management, sustainable supply chain management, green supply chain management, socially responsible supply chain management

1. Introduction

Sustainability has received a great deal of attention from various stakeholders including the media, customers, non-governmental organizations, investors, governments, and in academia. Accordingly, it has been recognized as an overriding business framework at the global level. Against this background, companies around the world, especially the multinational corporations (MNCs) are actively promoting and integrating sustainability initiatives and practices into their global business operations with the aim of differentiating themselves from their competitors (Eweje, 2011), and achieving societal legitimacy for their long-term survival (Szekely & Knirsch, 2005).

One of the primary reasons for a growing prominence of sustainability perspective in business is the global awareness and sensitivity towards social, ethical, and environmental issues (Eltantawy, Fox, & Giunipero, 2009; Epstein, 2008; Parmar et al., 2010). Thus, various stakeholder groups expect corporations to demonstrate a clear commitment to sustainability issues by utilizing innovative solutions and practices in their operations to attain improved sustainability outcomes.

Thus, concern around responsible business behavior is extending beyond traditionally defined corporate boundaries including the upstream and downstream supply chain practices of a company (Keating, Quazi, Kriz, & Coltman, 2008). Epstein (2008, p. 213) emphasizes that "many companies have endured protests from social activists and environmental groups because of their supply practices". Accordingly, a company may be perceived as not a genuine sustainability player if its supply chain activities and operations are subject to social, financial or environmental irregularity. As argued by Seuring and Muller (2008, p.1699), "… focal companies of supply chains might be held responsible for the environmental and social performance of their suppliers… This is especially the case for brand-owning companies, as they are likely to come under pressure from stakeholders …". For example, a number of large corporations such as Apple, Foxconn, Adidas, Reebok, Mattel, Gap, Tesco, Wal-Mart, IKEA, and Nike have been criticized for alleged violation of labour standards in their supply chains (Chhabara, 2011; Foley, 2012; Frost & Burnett, 2007;

Mellahi, Morrell, & Wood, 2010; Roberts, 2003; Xu & Li, 2012).

Consequently, sustainable supply chain management (SSCM) approach ensures that supply chain 'sustainability' issues are managed in the entire firm's supply chain network, so that potential organizational crisis arising from ethical or environmental irregularities may be avoided and improved stakeholder value could be delivered. Modern companies are increasingly focusing on improving sustainability issues in their supply chains. The aim is to create value for companies' stakeholders by enhancing sustainability performance beyond their in-house operations. However, it is important to emphasize that "organizations vary in the focus of their sustainable supply chain activities, with some firms putting greater emphasis on green issues and others prioritizing social aspects" (Walker & Jones, 2012, p. 15).

The purpose of this review article[i] is to address the following question: How and why do companies integrate sustainability into supply chain management (SCM)? First, this article presents a brief overview of sustainability and SCM concepts. In the next section we integrate sustainability and SCM concepts, and a conceptual framework for SSCM is introduced. Then, motivators and barriers for SSCM integration are identified and discussed. The article concludes with a discussion on the managerial implications of SSCM approach and direction for future research.

2. A Brief Overview of Sustainability and Supply Chain Management

2.1 The Sustainability Concept

There is no universally agreed definition of sustainability. However, in a simple term, sustainability basically refers to the integration of economic, social, environmental, and cultural concepts into business practices. The term sustainability originated from a much broader concept - 'sustainable development' (Caroll & Buchhollz, 2008). The World Commission on Environment and Development (WCED) defines sustainable development as "the development that meets the needs of the present generation without compromising the ability of future generations to meet their own needs" (WCED, 1987, p. 43). This definition remains the most quoted since it was first proposed by the Brundtland Commission in 1987 in its report 'Our Common Future'. The key principles of this definition are:

1. "the concept of 'needs', in particular the essential needs of the world's poor, to which overriding priority should be given," and
2. The idea of limitations imposed by the state of technology and social organization on the environment's ability to meet present and future needs" (WCED, 1987, p.43).

Therefore, sustainable development at a global level promotes synchronized improvements in areas such as human development, environmental conservation, social and intergenerational equity, as well as economic prosperity.

In business, the sustainable development notion implies a combined economic, social and environmental performance, often referred to as the 'Triple Bottom Line (TBL)' or 'Triple -Ps: people, planet and profit' (Elkington, 1998). This is in contrast to the traditional profit maximizing business model which provides least concern for the social and environmental outcomes of business activities (Friedman, 1970). The sustainability perspective presents a new progressive paradigm for social, environmental, and economic developments (Elkington, 1998; Epstein, 2008). Thus, a sustainability-oriented business may be defined as a firm which balances and promotes simultaneous economic, social and environmental benefits to its stakeholders, and remains viable in the long-run. Dyllick and Hockerts (2002, p. 131) combined the notion of sustainable development with corporate stakeholder needs to define sustainability as "meeting the needs of a firm's direct and indirect stakeholders (such as shareholders, employees, clients, pressure groups, communities etc), without compromising its ability to meet the needs of future stakeholders as well". Therefore, in essence the sustainability perspective requires companies to simultaneously improve their economic, social and environmental performance (Benn & Dunphy, 2009; Elkington, 1998; Epstein, 2008). In a similar vein, Szekely and Knirch (2005, p.628) posit that for business, sustainability means:

> Sustaining and expanding economic growth, shareholder value, prestige, corporate reputation, customer relationships, and the quality of products and services. It also means adopting and pursuing ethical business practices, creating sustainable jobs, building value for all company's stakeholders and attending to the needs of the underserved.

2.2. Supply Chain Management

Oliver and Webber (1982) first introduced the term - supply chain management (Christopher, 1992; Frankel, Bolumole, Eltantawy, Paulraj, & Gundlach, 2008). The SCM discipline has significantly evolved since it was first originated in the 1980s (Stock, Boyer, & Harmon, 2010). During the 1990s, the SCM rose to prominence and received much attention from scholars and practitioners alike (Frankel, et al., 2008). Interestingly, some authors believed that the real competition is no longer between companies but rather supply chain against supply chain (Christopher, 1992). Ever-increasing globalization, business competition, consumer expectations, government regulations, technology developments, and environmental uncertainty have played a significant role in the rapid developments of SCM.

2.2.1 Defining SCM

There is a lack of definitional consensus among scholars and practitioners as to how SCM should be conceptualized (Burgess, Singh, & Koroglu, 2006; Croom, Romano, & Giannakis, 2000; Gibson, Mentzer, & Cook, 2005; Mentzer et al., 2001). The SCM discipline is in the early stages of maturity (Burgess, et al., 2006; Gibson, et al., 2005), but its initial developments can be largely attributed to physical distribution and transport management (Croom, et al., 2000), purchasing, logistics, information technology, and marketing disciplines (Burgess, et al., 2006). To better understand the concept of SCM, it is significant to understand what is a supply chain? Christopher (1992, p. 15) defines supply chain as "the network of organizations that are involved, through upstream and downstream linkages, in the different processes and activities that produce value in the form of products and services in the hands of the ultimate consumer". Therefore, SCM can be described as the management of supply chain network which aims at delivering value and satisfaction in the shape of improved quality, delivery, and costs to the ultimate customer of a firm. Accordingly, Mentzer et al. (2001) define SCM as:

> The systematic, strategic coordination of the traditional business functions and the tactics across these business functions within a particular company and across businesses within the supply chain, for the purposes of improving the long-term performance of the individual companies and the supply chain as a whole. (p.18)

3. Integrating Sustainability and Supply Chain Management

SSCM is an interdisciplinary approach which integrates sustainability and SCM disciplines to accomplish sustainable business outcomes for the entire supply chain partners (producers, suppliers, customers, a focal company, and other relevant stakeholder groups). Over the past twenty years, a large number of scholars have contributed to the knowledge of SSCM discipline. It is significant to note that the environmental sustainability is more explored in the SSCM literature compared to the social dimension (Ashby, Leat, & Hudson-Smith, 2012; Seuring & Muller, 2008). In addition, the economic impact of SSCM practices in relation to socially and environmentally sustainable SCM practices are loosely aligned to each other. Similarly, the association between SSCM practices and economic bottom line has not been well explored (Carter & Rogers, 2008).

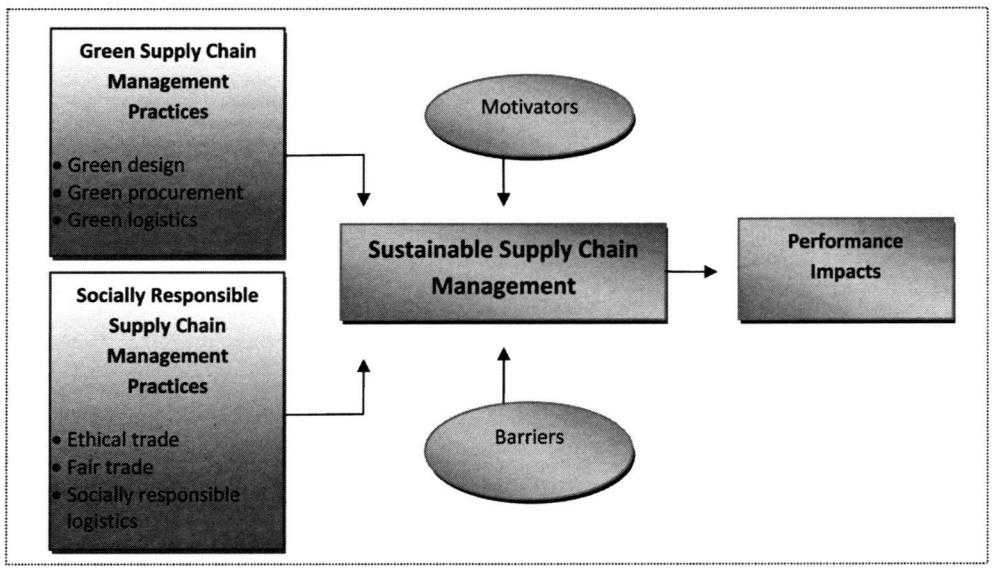
Accordingly, it is argued that the field remains fragmented as its activities, processes and strategies have been studied in a standalone manner (Carter & Rogers, 2008). However, some scholars have started to integrate relevant approaches and concepts from both disciplines to establish a holistic framework for SSCM (see for example, Ashby, et al., 2012; Brito & Lann, 2010; Carter & Rogers, 2008; Pagell & Wu, 2009; Wolf, 2011). To this end, Cater and Roger (2008, p.368) define SSCM as "the strategic, transparent integration and achievement of an organization's social, environmental, and economic goals in the systemic coordination of key interorganizational business processes for improving the long-term economic performance of the individual company and its supply chains". Similarly, according to Seuring and Muller (2008, p.1700) SSCM involves:

> The management of material, information and capital flows as well as cooperation among companies along the supply chain while taking goals from all three dimensions of sustainable development, i.e., economic, environmental and social, into account which are derived from customer and stakeholder requirements.

As previously stated, various SSCM practices and strategies are separately

discussed and few efforts are being made in the past to integrate these fragmented aspects into a holistic model. Thus, it is significant to determine how these assorted but interconnected approaches reinforce each other to deliver enhanced SSCM outcomes. To this end, an effort has been made in this article to integrate some important aspects of SSCM in a form of an integrative framework presented below in Figure 1. The detailed description of each element illustrated in the framework and their linkages are presented in the following discussion.

Figure 1: Sustainable Supply Chain Management Framework



3.1. Motivators and Barriers for SSCM

3.1.1. Motivators for SSCM

The motivators of SSCM are classified into two categories - external motivators and internal motivators. Previous research suggests that government policy and regulations (Ageron, Gunasekaran, & Spalanzani, 2011; Preuss, 2005; Walker, Di Sisto, & McBain, 2008), a growing customers' expectations for responsible and ethical business behaviour (Ageron, et al., 2011; Walker, et al., 2008), international regulations (Halldorsson, Kotzab, & Skjott-Larsen, 2009), competition in the marketplace (Walker, et al., 2008), non-governmental organizations (NGOs) (Argenti, 2004; Sharfman, Shaft, & Anex Jr, 2009; Walker, et al., 2008), and stakeholder pressure (Sarkis, Gonzalez-Torre, & Adenso-Diaz, 2010; Walker & Jones, 2012)

are significant external factors that motivate companies to adopt SSCM practices (Ageron, et al., 2011). Compliance to socially constructed norms, values, and beliefs has become a key requirement which drives companies to be more responsive to societal demands (Darnall, Jolley, & Handfield, 2008). For example, a number of scholars have suggested that there is rising customer awareness with regards to the conditions under which products are manufactured or produced (Ageron, et al., 2011; Halldorsson, et al., 2009; Walker, et al., 2008). This implies that customers prefer to purchase products and services which are produced under socially and environmentally friendly conditions. Also, some scholars have pointed out that there is a lack of customer demand for sustainable products and services (Seuring & Müller, 2008).

Notwithstanding, top management support and commitment (Carter & Rogers, 2008; Pagell & Wu, 2009; Walker & Brammer, 2009; Wittstruck & Teuteberg, 2011; Zhu, Sarkis, & Lai, 2008), competitiveness (Zhu, Sarkis, & Geng, 2005), and environmental management system (Handfield, Sroufe, & Walton, 2005) are some of the internal factors which drive companies to initiate SSCM programs. The existing SSCM literature suggests that no conclusion can be drawn with regard to what factors influence a company decision to incorporate SSCM practices. According to Seuring and Muller (2008, p.463), "future research would have to identify factors that really drive [including a focal company, its upstream and downstream supply chain partners] engagements".

3.1.2. Barriers for SSCM

Previous research has identified a variety of barriers to SSCM. These barriers to SSCM implementation can be classified into two categories - internal barriers and external barriers. Internal barriers include, financial preoccupation (Ageron, et al., 2011; Walker & Brammer, 2009), lack of management commitment, company size (Hervani, Helms, & Sarkis, 2005; Min & Galle, 2001), lack of supportive corporate structures and processes (Walker, et al., 2008), lack of training and understanding (Cooper, Frank, & Kemp, 2000), and issues related to measuring the impacts of SSCM practices on the economic, social and environmental performance of a firm (Seuring & Müller, 2008). External barriers involve a lack of customer willingness to purchase sustainable products (Wittstruck & Teuteberg, 2011), a lack of competence within the production facilities of suppliers (Ageron, et al., 2011),

competitive pressures (Cooper, et al., 2000), type of industry (Zhu, et al., 2005), lack of supplier's commitment, cooperation and coordination between supply chain members (Walker, et al., 2008), supply chain collaboration for the development of sustainable products and operations (Seuring, 2010), sustainable supplier relationship management (Leppelt, Foerstl, Reuter, & Hartmann, 2011), and higher prices of sustainable products (Walker & Brammer, 2009; Young, Hwang, McDonald, & Oates, 2009).

3.2. Green Supply Chain Management

The green supply chain management (GrSCM) is a better researched dimension of SSCM. Ashby et al., (2012) suggest that the environmental sustainability dimension is well represented at all stages of SSCM research. However, more or less the GrSCM approaches and practices have remained isolated. In general, the concept of GrSCM deals with improving the environmental sustainability within an organizational SCM. According to Srivastava (2007), GrSCM is a broad concept that underscores the management of environmental concerns in operations and SCM. Similarly, Zhu et al., (2005) argue that it is important to manage the environmental impacts at the various stages of a product life cycle. In this context, GrSCM might be considered as a more comprehensive approach which requires development and implementation of environmental management systems (EMSs) within an organization, and sharing, collaboration, and enforcement of EMS and practices across the supply chain network of the organization. Srivastava (2007, p. 54) defines GrSCM as "integrating environmental thinking into supply-chain management, including product design, material sourcing and selection, manufacturing processes, delivery of the final products to the consumers as well as end-of-life management of the product after its useful life". Some studies have found a positive relationship between GrSCM practices and firm performance (see for example, Lun, 2011). Conversely, Testa and Iraldo (2010) contend that while GrSCM practices are positively associated with firm's environmental performance, the impact of such practices on commercial performance of a firm is unclear. GrSCM encompasses a range of related areas such as green design, environmental purchasing, sustainable production, green logistics (including reverse logistics) (Srivastava, 2007; Zhu, et al., 2005). The three main components of GrSCM are explained in the following discussion: green design, green procurement, and green logistics.

3.2.1. Green Design

The green design relates to the environmentally conscious design and life cycle analysis of a product (Srivastava, 2007). The goal of green product design is to examine the design implications of a product on the natural environment including its procurement, manufacturing, use, and recycling stages (Glantschnig, 1994). Therefore, green design focuses on the development and design of processes, systems and new products with the goal to reduce environmental impacts on the natural environment (Srivastava, 2007; Tsoulfas & Pappis, 2006). However, "redesign products will only be effective if they are able to provide at least the services of the products they replace" (Tsoulfas & Pappis, 2006, p. 1596). In other words, products should be designed in such a way in which they are functionally durable, re-useable, recoverable safely after use, and environmentally friendly in disposal (Gotzel, 1999).

Specifically, green design requires consideration for the selection of materials used in the production process (Tsoulfas & Pappis, 2006). Raw material with high recycling characteristics and least environmental impacts should be given a priority in SCM decisions (such as material selection, purchase, manufacturing, packaging, and distribution). For example, a poor package design and material selection in the early stage of SCM would cause negative environmental impacts during product use, delivery and disposal. Other strategies related to green design strategies include design for waste minimization (Sarkis & Cordeiro, 2001), replacement of hazardous materials to less injurious substance used in production (Graedel, 2002), and design for remanufacturing (Inderfurth, de Kok, & Flapper, 2001).

3.2.2. Green Procurement

Green procurement or purchasing is concerned with prioritizing the environmental sustainability criteria while making purchase decisions in a firm. It has been acknowledged that procurement is a major SCM activity which might creates a significant impact on environmental performance of a firm (Preuss, 2001; Zsidisin & Siferd, 2001). However, some studies reported that there is no strong presence of sustainable procurement practices in some industries (Bjorklund, 2011). Zsidisin and Siferd (2001) define environmental purchasing as:

> The set of purchasing policies held, actions taken, and relationship formed in response to concerns associated with the natural environment. These

> concerns related to the acquisition of raw material, including supplier selection, evaluation, and development; suppliers' operations; inbound distribution; packaging; recycling; reuse; resource reduction; and final disposal of the firm's products (p.69).

Supplier relationship management (SRM) focuses on collaborating with suppliers and building suppliers' capabilities so that they provide sustainable supplies and material to a focal company. SRM approach deals with supplier selection, training and development, performance evaluation, and reward for improved performance (Schiele, 2007). Leppelt et al., (2011) have conducted a study on sustainable supplier relationship management (SSRM) and purchase and supply management (PSM) practices of leading companies in the European chemical industry. The study concluded that sustainability driven companies intensively invest in SSRM practices to manage sustainability performance in downstream SCM activities.

3.2.3. Green Logistics

Traditional logistics focuses on the supply of goods from manufacturer to the end user (Lippman, 2001). However, green or environmental logistics relates to the management of goods from producer to the end consumer with minimum environmental impacts as well as the management and disposal of product at the end of the product life cycle (Lippman, 2001). Therefore, the scope of green logistics is much wider than the scope of the tradition logistics function. Those companies which adopt green logistics approach are required to manage bi-dimensional flows of information, materials and products to address environmental concerns related to product disposal and recycling.

The Green Logistics Institute (2011) defines green logistics as:

> The integrated management of all the activities required to move products through the supply chain. For a typical product this supply chain extends from a raw material source through the production and distribution system to the point of consumption and the associated reverse logistics. The logistical activities comprise freight transport, storage, inventory management, materials handling and all the related information processing.

Reverse logistics (closing the supply chain loop) is considered as an integral part of the green logistics strategy that can help environmental conservation and save landfill space by reclamation, reuse and recycling measures (Kulwiec, 2008; Sarkis, Helms, & Hervani, 2010). Rogers and Tibben-Lembke (1999) define reverse logistics as:

> The process of planning, implementing, and controlling the efficient, cost effective flow of raw materials, in-process inventory, finished goods, and related information from the point of consumption to the point of origin for the purpose of recapturing or creating value or proper disposal. (p.2)

Therefore, the concept reverse logistics recognizes the end of product life management (Varma, Wadhwa, & Deshmukh, 2006). The main objective of this approach is resources reduction by recycling, remanufacturing, and reuse, and waste and emissions minimization thorough end of product life management. Therefore, companies promote reverse logistics practices so that they can reduce costs, achieve better market profile, compliance with regulatory requirements, and attain competitive advantage in the marketplace by closing the supply chain loop (Nikolaou, Evangelinos, & Allan, 2011).

3.3. Socially Responsible Supply Chain Management

Corporate social responsibility (CSR) epitomizes the social dimension of sustainability. The World Business Council for Sustainable Development (WBCSD) (1998, p. 3) defines CSR as "the continuing commitment by business to behave ethically and contribute to economic development while improving the quality of life of the workforce and their families as well as of the local community and society at large". The focal company through a number of initiatives might ensure that suppliers of a focal company are acting responsibly, such as development and implementation of code of conduct for suppliers, purchase of fair trade products, and enforcement of the ethical trade standards while dealing with supply chain partners (Blowfield, 2000; Koplin, Seuring, & Mesterharm, 2007). The key practices related to the socially responsible supply chain management (SRSCM) include fair trade, ethical trade and socially responsible logistics.

3.3.1. Fair Trade

Fair trade deals with building equity in trading relationships between developing and developed world. Fair trade is defined as an "alternative approach to trading partnership that aims for sustainable development of excluded and/or disadvantaged producers. It seeks to do so by providing better trading conditions, raising awareness, and campaigning…" (Krier, 2001 as cited in Pelsmacker, Driesen, & Rayp, 2003, p. 367). Thus, fair trade practices help marginalized producers in developing countries to get fair prices for their products (Barrientos & Dolan, 2006).

3.3.2. Ethical Trade

The notion of ethical trade originated in the mid-1990s because of an increased global recognition of CSR and sustainability perspectives (Barrientos & Dolan, 2006). McEwan and Bek (2009, p. 723) define ethical trade as the "sourcing of products from producers guaranteeing core labour and human rights standards to their workforce". Similarly, the Ethical Trading Initiative (ETI) (2011), a leading organization that promotes ethical trade initiatives defines ethical trade as:

> Ethical trade means that retailers, brands and their suppliers take responsibility for improving the working conditions of the people who make the products they sell.?Most of these workers are employed by supplier companies around the world, many of them based in poor countries where laws designed to protect workers' rights are inadequate or not enforced. Companies with a commitment to ethical trade adopt a code of labour practice that they expect all their suppliers to work towards. Such codes address issues like wages, hours of work, health and safety and the right to join free trade unions.

The major reason for ethical trade practices is the International Labor Organization (ILO) convention which recognizes the importance of improved working conditions in organizations through a commitment to the code of labor practices (Tulder, Wijk, & Kolk, 2008). The purpose of code of labour practices is to ensure that a focal company as well as its downstream supply chain partners follows guidelines on workplace related issues. For instance, issues such as child labour, minimum wage, health and safety hazards, minimum

working hours, exploitation of immigrant workers and discrimination fall under the domain of ethical trade. Blowfield (2000, p. 191) argues that "codes lie at the heart of ethical trading or ethical sourcing, and often undertake issues central to sustainable business".

3.3.3. Socially Responsible Logistics

Logistics and distribution social responsibility concept encompasses two main areas - transportation and warehousing management (Carter & Jennings, 2002). The notion proposes that socially sustainable organizations need to be aware of their social responsibility in logistics and warehouse management. These responsibilities include: ensuring safe working conditions for workers, quality of life, diversity, human rights, safety, and philanthropy and community development (Carter & Jennings, 2002; Halldorsson, et al., 2009; Tulder, et al., 2008).

3.4. Performance Impact of SSCM

For business practitioners, the development and inclusion of SSCM approach into their organizations requires some justification whether SSCM practices presents a business case or not. Previous research on SSCM integration suggests that implementation of SSCM practices have potential to deliver a wide range of benefits to the practicing organization as well as supply chain partners. According to New Zealand Business Council for Sustainable Development (2003), the SSCM approach offers a number of benefits to companies that incorporate SSCM practices into their policy, strategies and operations. The benefits include improved shareholder value, employee value, risk management and mitigation, market appeal resulting from product stewardship strategy, investor appeal and efficiency (NZBCSD, 2003). In a similar vein, Ageron et al. (2011) point out that SSCM practices contribute to customer satisfaction, quality, suppliers' innovation, trust, managing supply risk, and fill rate. Other key benefits of SSCM adoption include: improved reputation including company's brand reputation (Eltantawy, et al., 2009; Ratan, Sekhari, Rahman, Bouras, & Ouzrout, 2010), increased ability to attract and retain employees, reduced operating costs (Ratan, et al., 2010), transport savings, savings through recycling and resource minimization, better quality products, reduced risk of damage brand, savings due to consolidation of shipments, as well better working condition which may increase productivity (Halldorsson, et al., 2009; Srivastava, 2007).

5. Conclusion, Theoretical Contributions, Managerial Implications, and Directions for Future Research

Companies are increasingly integrating SSCM practices into their strategic and operational decisions. This is in stark contrast to the past, when organizations were criticized for unsustainable practices in their supply chains. However, there is a need to understand how and why companies should incorporate SSCM practices. Efforts have been made in this article to articulate the factors which prompt companies to embed SSCM approach and how implementation may be realized thorough various SSCM strategies and initiatives. In this regard, using the current SSCM literature, the key motivators and barriers to successful SSCM implementation, and relevant SSCM strategies including GrSCM and SRSCM as well as their impacts on firm's SCM performance were illustrated.

Building on the current body of knowledge, this article contributes to the theory development by offering a conceptual framework on SSCM. The framework offers an integrative conceptualization of various related SSCM concepts. Moreover, we argue that the relevant concepts described and integrated in this article would contribute to and expand the theoretical boundaries of SSCM discipline.

In addition, the proposed framework provides some useful implications for business. The framework suggests the motives and barriers to SSCM implementation. It is significant to mention that these factors vary across different business sectors. Thus, sustainability and SCM professionals need to understand their business environment including stakeholder expectations, industry sensitivity, business risks (e.g. reputational and financial), and perceived benefits. These environmental factors largely determine what aspects of supply chain would need a priority managerial attention and what challenges are involved in the implementation of SSCM strategy to overcome a particular supply chain issue. The framework also suggests the type of SSCM practices and initiatives which might enhance supply chain sustainability of a firm and its supply chain partners. The relationship between SSCM strategies and impact on performance are presented to demonstrate how SSCM practices could facilitate sustainability-oriented outcomes.

Future research endeavors should focus on exploring and empirically testing the monetary benefits of SSCM implementation as previous research inquiries have insufficiently addressed this important aspect to date. This type of research would help managers to understand and confidently implement SSCM practices in their respective business domains. Moreover, more attention is required to examine the role of collaboration and networking in building supply chain sustainability including intra- and inter- organizational collaboration. As Fabbe-Coastes, Roussat, and Colin (2011, p. 240) emphasize "to tackle sustainable supply chain issues, a company must collaborate with the network of firms it is embedded in, with governments or regulatory bodies, and making the most of every competence and resource available". Accordingly, enhanced outcomes may only be realized when all supply chain partners actively contribute, promote, and implement SSCM practices.

Notes

[i] This paper is based on Aymen Sajjad's current PhD study. Aymen's PhD investigates how and why New Zealand companies integrate sustainable supply chain management (SSCM) practices into their supply chains.

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